

Cruise: SKO0721
Ship: M/V Skogafoss
Dates: May 26 – June 2, 2007
Chief Scientist: not applicable
Equipment: Surface samples collected.
Total number of stations: VOS Underway Cruise

Sample Collection

The discrete samples were collected by Denis Pierrot at a tap on the side of the TSG enclosure in the engine room. The underway pCO₂ instrument and the TSG were supplied with water from the flow used for engine cooling. The water flowing through the TSG is believed to be 0.2 degrees C warmer than in-situ SST. The date and time listed in the data file are UTC when each sample bottle was collected.

DIC:

18 locations, 20 samples each 500-ml, 2 sets of duplicate samples
Sample_ID#: 219 - 244
PI: Dr. Rik Wanninkhof
Analyzed by: Esa Peltola

TAlk:

The samples analyzed for DIC were later analyzed for TAlk.
PI: Dr. Frank Millero
Analyzed by:

Salinity_2:

7 locations, 21 samples each 180 ml
Sample_ID#: 1 - 21
PI: Dr. Jonathan Hare
Analyzed by: Northeast Fisheries Science Center, Narragansett Laboratory

Nutrients:

7 locations, 7 samples each 250 ml
Sample_ID#: DP-1 – DP-7
PI: Dr. Gilles Reverdin
Analyzed by: Solveig Olafsdottir

Sample Analysis

DIC:

Analysis date: September 24, 2007
Coulometers used: DICE3 and DICE4
Blank range: 14.3-25.0 counts/min

CRM # used and assigned value (include both DIC and salinity): Batch 59, c: 2007.1
umol/kg, S: 33.316

CRM value measured: DICE3: offset 1.6 umol/kg (2008.7 umol/kg)

DICE4: offset 3.2 umol/kg (2010.3 umol/kg)

Average run time, minimum run time, maximum run time: 8 min, 8 min, 8 min

Reproducibility: (# samples and average difference): 2 sets of duplicate samples, average difference 0.5 umol/kg

CRM, salinity and HgCl₂ correction applied: Salinity correction was applied for all the samples using TSG salinity; CRM and HgCl₂ volume correction was applied

Remarks-

The volume correction was applied due to added HgCl₂ (Measured DIC*1.00037).

The first CRM of each cell was used for a CRM correction.

There was a good agreement between the duplicate samples.

Comments

A GPS transducer was connected to the underway pCO₂ instrument as well as a thermosalinograph (TSG). The GPS and the TSG, a Seabird SBE-21, were maintained by the Ship of Opportunity Program at AOML (<http://www.aoml.noaa.gov/phod/tsg/soop/index.php>).

The latitude, longitude, temperature and salinity reported with the DIC and TALK measurements were taken from the raw TSG data file. The merging of the discrete measurements with the TSG data was done on the basis of date and time. The TSG values are provided for reference; no post-cruise assurance of accuracy has been done to this data.

The Sample_ID is the sample bottle number for the discrete samples.